

Where Is Agriculture Important?

More than one in six U.S. jobs stem from agriculture. Even in nonfarm States, a substantial portion of jobs are in the food and fiber system. There are several ways of measuring the dependence of a State's economy on agriculture. We present several alternatives and compare these estimates of dependence in 1997 with similar estimates of 1981 conditions.

Rural development planners, rural legislators, agricultural college deans, and representatives from agricultural commodity groups all at some time or another have expressed interest in measuring the importance of agriculture in a particular State. They often want to compare agriculture's importance in different States. To address this concern, we derived estimates of agriculture's importance for all States using common estimation procedures and data.

To measure the importance of agriculture, we estimated the supporting economic activity required to produce farm products and move them to products ready for consumers. We included the activity that produces farm inputs (fertilizer, manufactured feeds, etc.), farm production, and assembling, processing, and distributing raw farm products for final consumption by domestic and foreign consumers—activities that make up the U.S. food and fiber system (FFS). Several factors help make agriculture important to a State's economy—a viable farm economy, a concentration of sector-supporting industries, and a relative scarcity of nonagricultural economic activity.

Size Versus Share of Economy

California illustrates the classification dilemma. It is the leading producer of many commodities, has many successful commercial farms, and has a strong base of farm-supporting industries. As a result, California has the largest number of workers who owe their jobs to agriculture—2.7 million. The size of its FFS workforce makes it the leading State in the national food and fiber system. But California is not an agriculturally dependent State. With a total labor force of 16 million, agriculture accounts for a smaller share of the State's economy (16.9 percent of civilian workforce) than its national share (17.8 percent of civilian workforce).

In contrast, consider the Dakotas. Their FFS employment is between 89,000 and 97,000, half of it farmers and farm workers, and FFS jobs account for more than 25 percent of all jobs in each State. FFS jobs are very important in the Dakotas, although the combined total FFS employment in these States accounts for less than 1 percent of U.S. employment in the food and fiber system.

How do you tell how important agriculture is to your State? In an earlier article, we addressed this question using 1981 data (see Gerald Schluter and William Edmondson, "How to Tell How Important Agriculture Is to Your State," *Rural Development Perspectives*, Vol. 2, No. 3, June 1986). We concluded that the importance measure depends upon what you are looking for. This article uses 1997 data to revisit our earlier analysis. We include estimates of each State's FFS employment in 1997 and 1981 (table 1), the FFS's share of total State workforce (fig. 1) and of the relative importance of selected groups of workers in the region's FFS workforce.

Table 1 shows FFS jobs for 1981 and 1997 by State, while figure 1 shows FFS employment proportions of total civilian employment for each State. Between 1981 and 1997, total FFS employment rose by 3 million workers, from 21.3 to 24.3 million. Not all States shared in this growth. Nine States lost workers involved in producing, assembling, and processing raw farm products and in industries that distribute those products to domestic and foreign consumers. The loss of FFS employment followed no particular pattern. States with large FFS workforces lost jobs (New York, Pennsylvania), as did States where the share of FFS employment was high (North Dakota and South Dakota). States in similar groupings gained employment. Nebraska, for instance, had the highest percentage of FFS workers in its State workforce in 1997 and also saw its FFS employment increase nearly 28 percent from 1981 to 1997. California, the State with the largest FFS employ-

Table 1

Food and fiber system employment by State, 1981 and 1997

California was the leading State in food and fiber system employment for both 1981 and 1997

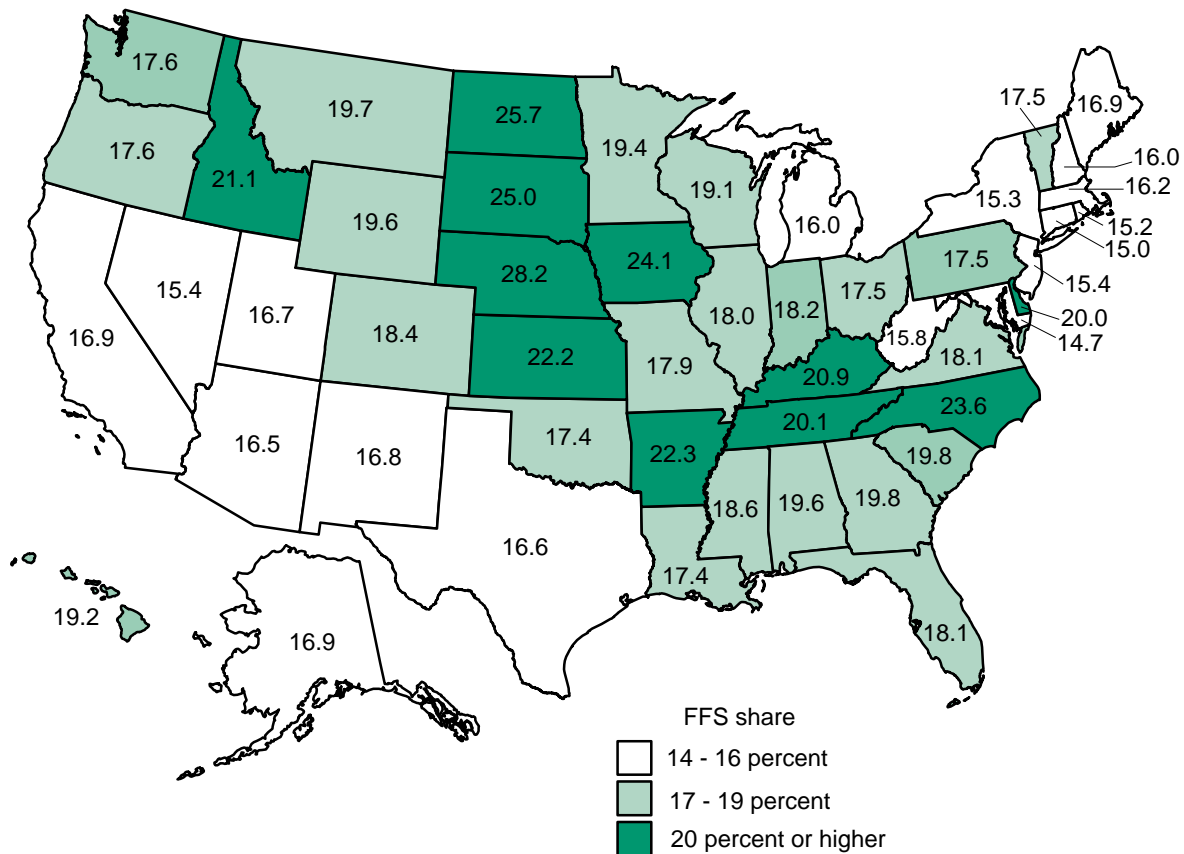
State	1997 Employment 1,000 workers	1997 Ranking	1981 Employment 1,000 workers	1981 Ranking	1981-97, Percent change ¹ 1981-97
Alabama	425.8	20	380.2	19	12.0
Alaska	53.2	50	34.7	51	53.4
Arizona	359.4	26	218.7	32	64.3
Arkansas	270.8	31	213.9	33	26.6
California	2,701.3	1	2,160.2	1	25.1
Colorado	396.5	23	299.6	26	32.4
Connecticut	259.4	32	251.0	30	3.3
Delaware	76.5	47	56.4	48	35.6
District of Columbia	63.4	48	68.8	47	-7.9
Florida	1,286.2	4	858.8	7	49.8
Georgia	774.6	10	623.8	11	24.2
Hawaii	114.4	40	103.4	40	10.7
Idaho	133.6	38	107.2	38	24.6
Illinois	1,112.3	5	1,044.2	5	6.5
Indiana	560.5	14	465.6	18	20.4
Iowa	380.9	25	361.0	23	5.5
Kansas	304.1	29	276.7	28	9.9
Kentucky	400.5	22	330.4	25	21.2
Louisiana	351.2	27	378.1	20	-7.1
Maine	111.7	41	110.3	37	1.2
Maryland	410.4	21	368.5	22	11.4
Massachusetts	526.8	16	523.8	13	.6
Michigan	794.9	9	640.2	9	24.2
Minnesota	510.3	19	478.4	17	6.7
Mississippi	235.2	34	221.9	31	6.0
Missouri	518.1	18	521.9	15	-7
Montana	89.7	44	82.4	43	8.9
Nebraska	255.6	33	199.7	34	28.0
Nevada	136.1	37	69.5	46	95.9
New Hampshire	103.3	42	81.4	44	26.9
New Jersey	647.4	11	630.7	10	2.6
New Mexico	136.8	36	106.9	39	28.0
New York	1,351.7	3	1,472.0	2	-8.2
North Carolina	907.7	8	789.5	8	15.0
North Dakota	89.5	45	90.3	42	-.9
Ohio	999.9	7	872.6	6	14.6
Oklahoma	278.0	30	298.8	27	-6.9
Oregon	304.5	28	252.7	29	20.5
Pennsylvania	1,044.3	6	1,068.2	4	-2.2
Rhode Island	76.6	46	76.0	45	.7
South Carolina	382.6	24	353.3	24	8.3
South Dakota	97.4	43	98.2	41	-.8
Tennessee	543.2	15	487.0	16	11.5
Texas	1,639.5	2	1,405.9	3	16.6
Utah	173.2	35	120.9	36	43.3
Vermont	57.1	49	43.7	50	30.7
Virginia	617.2	12	546.9	12	12.9
Washington	524.6	17	374.1	21	40.2
West Virginia	127.2	39	134.5	35	-5.4
Wisconsin	562.5	13	522.4	14	7.7
Wyoming	49.1	51	44.7	49	9.9
United States	24,326.8	NA	21,320.0	NA	14.1

NA = Not applicable.

¹Percentage change in food and fiber system employment from 1981 to 1997.

Source: ERS analysis of U.S. Department of Commerce data.

Figure 1

Food and fiber system share of employment by State, 1997*States in the Great Plains have the highest share of jobs in the food and fiber system*

Source: ERS analysis of U.S. Department of Commerce data.

ment, saw its FFS employment grow 25 percent from 1981 to 1997. In general, FFS employment accounts for a larger share of total employment in rural States with relatively weak combined manufacturing, forestry, and mining sectors.

The FFS is important to all States. Nationally, the FFS accounts for 17.8 percent of total employment. Among the States, the share ranges from 14.7 percent in Maryland to 28.2 percent in Nebraska, but in nearly two-thirds of the States the FFS employment share of total employment is between 15 and 20 percent. Contributing to this grouping is a growing trend to more of the FFS jobs being at the consumer end of the FFS delivery chain. These jobs tend to be in transportation, wholesale and retail trade, and food service. As we see in table 2, employment in these sectors is more evenly distributed regionally.

Composition of FFS Employment Varies by Region

While table 1 emphasizes the level of employment, table 2 illustrates how the sectoral mix of FFS employment varies regionally. As in 1981, farming and food processing jobs are more important in the Midwest. Textile manufacturing jobs accounted for more than 7 percent of FFS jobs in the South. FFS manufacturing jobs other than food processing and textile manufacturing were relatively more important in the Northeast and North Central regions.

Table 2

Types of food and fiber system jobs by region, 1997*The Midwest has the greatest concentration of farming and food processing jobs*

	Northeast	North Central	South	Midwest	West	United States
	Percent					
Farming	2.23	6.44	7.24	19.49	7.97	7.49
Food processing	4.45	5.99	5.32	8.34	5.49	5.59
Textiles	5.00	.78	7.32	1.34	2.94	4.37
Other manufacturing	6.05	7.60	5.25	4.79	3.53	5.37
Wholesale and retail	38.51	35.12	32.75	29.54	32.17	33.73
Transportation	2.55	2.63	2.37	2.55	2.36	2.46
Food service	25.38	28.85	26.00	23.09	27.83	26.50
Other	15.83	12.58	13.76	10.86	17.71	14.51
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: ERS analysis of U.S. Department of Commerce data.

Alternate Views of Agricultural Dependency

Which States are agriculturally dependent? In our previous article, we chose four possible criteria and listed the 10 top States for 1981 under those criteria (see box, "Ranking States by Dependence on Agriculture"). If one defines importance as the total FFS workers within a State, then the most important States are those listed in the upper left of the box. If one defines importance as the share of the State's employment accounted for by the FFS workers, then the most important States are those listed in the upper right of the box. If one's interest is in farm workers rather than FFS workers, the lower part of the box gives similar comparisons. We show the 1981 list alongside the 1997 list under the same criteria. In 1981, North Carolina and Iowa both appeared on three of the four lists; North Carolina on the number of FFS jobs, number of farm workers, and the FFS proportion of total and Iowa on number of farm workers, the FFS proportion of total, and farm workers' share of State FFS employment. In 1997, North Carolina and Iowa repeated on those lists and Nebraska joined Iowa on its lists.

Why do we care about which States are farm dependent? American agriculture is in a price slump. It is no coincidence that there is a strong overlap between the States on our four lists of farming-dependent States under different criteria and the list of States whose public officials have expressed concern about the economic health of American agriculture. [Gerald Schluter, 202-694-5395, schluter@ers.usda.gov; William Edmondson, 202-694-5374, wedmonds@ers.usda.gov]

Ranking States by Dependence on Agriculture

States with the most food and fiber system workers:

	1997	1981
1.	California	California
2.	Texas	New York
3.	New York	Texas
4.	Florida	Pennsylvania
5.	Illinois	Illinois
6.	Pennsylvania	Ohio
7.	Ohio	Florida
8.	North Carolina	North Carolina
9.	Michigan	Michigan
10.	Georgia	New Jersey

States with the highest proportion of food and fiber system workers:

	1997	1981
1.	Nebraska	South Dakota
2.	North Dakota	North Dakota
3.	South Dakota	North Carolina
4.	Iowa	Iowa
5.	North Carolina	South Carolina
6.	Arizona	Idaho
7.	Kansas	Nebraska
8.	Idaho	Georgia
9.	Tennessee	Alabama
10.	Delaware	Tennessee

States with the most farm workers:

	1997	1981
1.	California	California
2.	North Carolina	Texas
3.	Texas	North Carolina
4.	Iowa	Minnesota
5.	Nebraska	Michigan
6.	Illinois	Wisconsin
7.	Kansas	Iowa
8.	Minnesota	Illinois
9.	Kentucky	Missouri
10.	Wisconsin	Kansas

States with the highest proportion of farm workers to the State's total food and fiber system jobs:

	1997	1981
1.	North Dakota	South Dakota
2.	South Dakota	North Dakota
3.	Nebraska	Iowa
4.	Iowa	Idaho
5.	Kansas	Montana
6.	Idaho	Kansas
7.	Montana	Nebraska
8.	Kentucky	Minnesota
9.	Arkansas	Wisconsin
10.	Wyoming	Oklahoma

Source: ERS analysis of U.S. Department of Commerce.